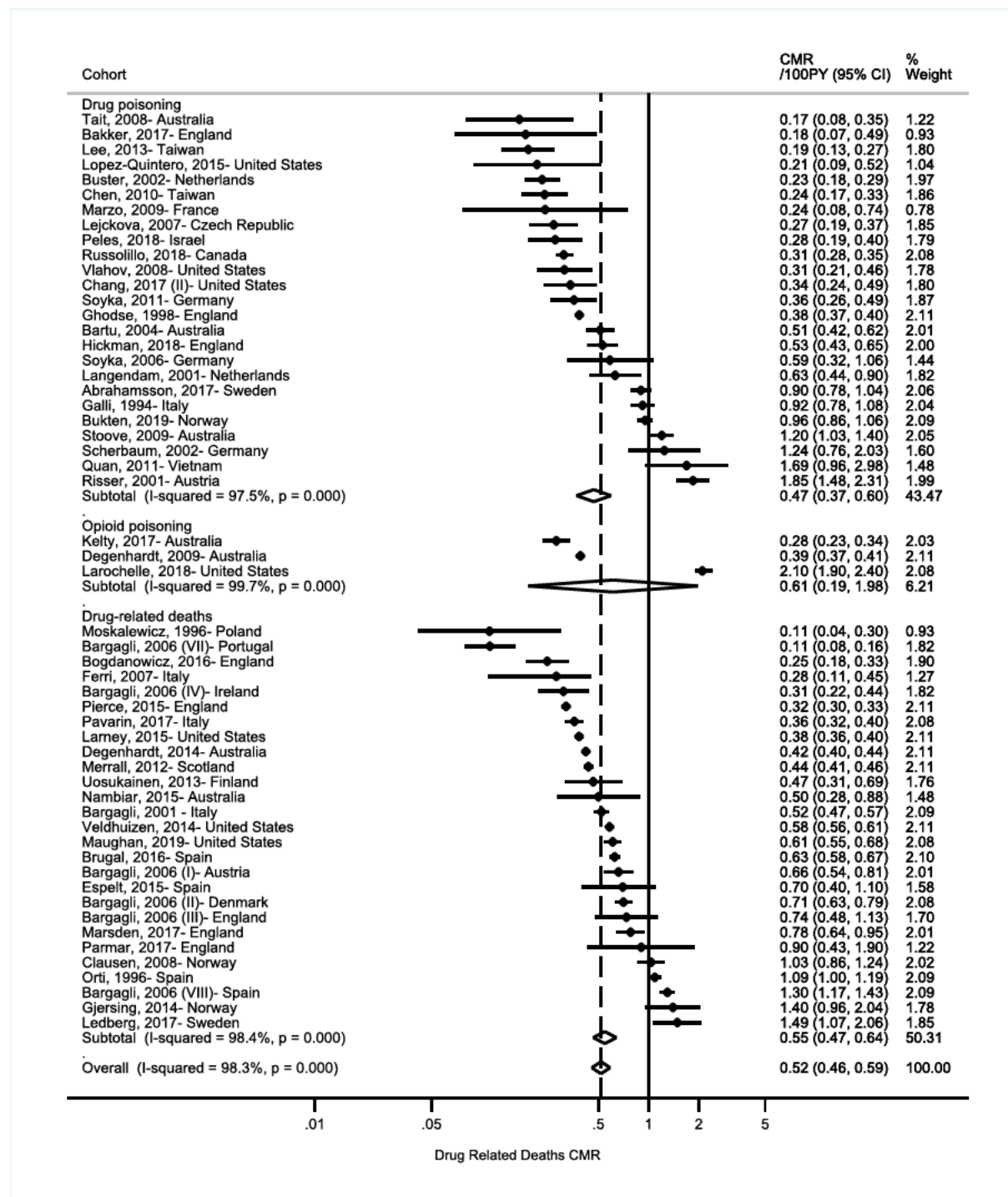


Figure 7.21: Drug-related crude mortality rate



WMT-MDL-01614

**eAppendix 5: Characteristics of included studies**

Studies in shaded lines are secondary studies containing additional detail on primary studies. The primary study is located directly above the secondary study/ies

Study (Author, ref)	Years of cohort observation	Country	Sample description	N	N deaths	N person-years
<b>Abrahamsson, 2017<sup>1</sup></b>	2005-2012	Sweden	People with opiate dependence prescribed and dispensed methadone or buprenorphine for OMT between 2005-2012	4501	356	21438
<b>Bakker, 2017<sup>5</sup></b>	1994-2014	England	Patients treated for opiate dependence at Lisson Grove Health Centre in central London between 1994-2014 as identified through EMIS database	278	41	2181
<b>Bargagli, 2001<sup>6</sup></b>	1980-1997	Italy	People who use drugs and entered treatment in Rome	10308	1734	80787
<b>Bargagli, 2006<sup>7</sup></b>	1990-2003	Austria	People with an opiate dependence enrolled in MMT in GPs, residential, outpatient or prison settings within Vienna enrolled between 1990-1998	4150	195	14834.62
		Denmark	People with an opiate dependence entering treatment between 1996-1999 as identified through National Treatment Database	8808	701	40317.8
		England	People with an opiate dependence entering treatment during 1997-1999 in London	881	35	2850.39
		Ireland	People with an opiate dependence entering treatment centers or treated by GPs in Dublin between 1994-1997	5285	114	10345.27
		Portugal	People with an opiate dependence entering one specialised residential and nine specialised outpatient treatment centers in Lisbon between 1992-1999	3275	1137	30237.06
		Spain	People with an opiate dependence entering specialised outpatient treatment centers in Barcelona between 1992-1999	5037	1734	80787
<b>Bartu, 2004<sup>10</sup></b>	1985-1998	Australia	Patients admitted to Perth metropolitan hospitals or psychiatric institutions	2887	253	19913
<b>Bogdanowicz, 2016<sup>13</sup></b>	2008-2014	England	Patients diagnosed with primary or secondary opioid dependence identified through the South London and Maudsley Case (SLAM) Register between 2008- 2014 and at least one item completed on Brief Risk Scale Assessment - Addiction (BRSA-A)	4488	227	17804.59
<b>Brugal, 2016<sup>15</sup></b>	1997-2008	Spain	People who use heroin starting publicly funded or owned outpatient drug treatment in Madrid and Barcelona between 1997-2007	15305	2354	118902
<b>Bukten, 2019<sup>18</sup></b>	1997-2009	Norway	Patients applying or entering into Opioid Maintenance Treatment (OMT) as identified through the national OMT research registry between 1997-2009	6871	697	40517
<b>Clausen, 2008<sup>19</sup></b>	1997-2003	Norway	People who are opioid dependent applied and were accepted for OMT in Norway between 1997-2003	3789	213	10934
<b>Buster, 2002<sup>21</sup></b>	1986-1998	Netherlands	Clients currently receiving or recently left methadone treatment who were born and residing in Amsterdam.	5200	68 <sup>a</sup>	29,729
<b>Chang, 2017(II)<sup>25</sup></b>	2006-2014	United States	Patients who are dependent on opioids enrolled in the U.S. START study between 2006-2009	1267	71	8413.75
<b>Chen, 2010<sup>26</sup></b>	1998-2005	Taiwan	First time drug offenders who served at least 1 day in correctional facilities between 1998-2001 as identified through judiciary records of the Ministry of Justice, Taiwan	5519	198	15975.59
<b>Degenhardt, 2014a<sup>29</sup></b>	1985-2005	Australia	NSW residents registered for OST between 1985-2005 derived from the Pharmaceutical Drugs of Addiction System (PHDAS) database	43789	3685	412216
<b>Degenhardt, 2009<sup>30</sup></b>	1985-2006	Australia	Clients administered methadone or buprenorphine as opioid replacement therapy between 1985-2006 as identified using NSW PHDAS	42676	3803	425998

Study (Author, ref)	Years of cohort observation	Country	Sample description	N	N deaths	N person-years
Espelt, 2015 <sup>35</sup>	2001-2006	Spain	Street recruited participants aged 18-30 via snowball sampling in Barcelona and Madrid between 2001-2003, self-reporting use of opioid and enrolled into ITINERE Project study	791	17 <sup>a</sup>	2435
Ferri, 2007 <sup>40</sup>	1998-2001	Italy	People who use heroin attending public treatment centres in Italy	10376	190	15369
Galli, 1994 <sup>44</sup>	1980-1988	Italy	People who inject drugs voluntarily attending four public drug-dependence treatment centres in Milan	2432	413	16415
Ghodse, 1998 <sup>47</sup>	1967-1993	England	Newly notified people who are dependent on opioids reported to UK Home Office	92802	5310	687673
Gjersing, 2014 <sup>49</sup>	1997-2004	Norway	Street-recruited people who inject drugs outside an Oslo needle exchange programme facility in March, June and September 1997	156	45	1927
Hickman, 2018 <sup>53</sup>	1998-2014	England	Patients who are dependent on opioids receiving OST through a primary care practice between 1998-2014 as identified through the Clinical Practice Research Datalink	11033	587	30410
Kelty, 2017b <sup>64</sup>	2001-2010	Australia	Patients dependent on opioids and treated with methadone, buprenorphine or implant naltrexone for the first time in Western Australia between 2001-2010 identified using Monitoring of Drug of Dependence System (MODDS)	5137	11 <sup>a</sup>	27409 <sup>b</sup>
Tait, 2008 <sup>65</sup>	2001-2006	Australia	Individuals receiving sustained-release naltrexone implant treatment in a private community treatment agency or methadone as identified through the State Drugs, Poisons, and Therapeutic Goods Control Branch of the Department of Health within Western Australia for the first time between 2001-2002.	894	21	4166.86
Langendam, 2001 <sup>67</sup>	1985-1996	Netherlands	People who use heroin within Amsterdam Cohort Study	827	150	4961
Larney, 2015 <sup>68</sup>	2000-2011	United States	Random sample of adults within Veterans Health Administration National Patient Care Database with lifetime diagnosis of opioid use disorder between FY 2000-2011	60270	9386	348124
Larochelle, 2018 <sup>69</sup>	2012-2015	United States	Individuals in Massachusetts who experienced a non-fatal opioid overdose between 2012-2014 as identified through databases of emergency departments, observations and in-patient encounters with medical claim containing opioid poisoning diagnosis code	17568	807	17170.21 <sup>c</sup>
Ledberg, 2017 <sup>70</sup>	2006-2013	Sweden	Methadone maintenance therapy initiators in Stockholm county between 2006- 2011 as identified using Lakemedelsregistret (nation-wide official registry of prescription drugs sold in pharmacies)	441	67	2419
Lejckova, 2007 <sup>71</sup>	1997-2002	Czech Republic	Patients hospitalised for drug related behavioural disorders	4206	114	13323.9
Lee, 2013 <sup>75</sup>	2006-2008	Taiwan	People who use heroin attending MMT in any treatment center in Taiwan between 2006-2007 identified via multiple-center MMT register system	10842	137	7348.32
Lopez-Quintero, 2015 <sup>80</sup>	1980-2007	United States	Adults participants in United States Epidemiologic Catchment Area Program field surveys from New Haven, Baltimore, Saint Louis and Durham, and self-reported heroin use	101	29	2331
Marsden, 2017 <sup>83</sup>	2010-2016	England	Prisoners diagnosed with opioid use disorder in 39 adult prisons in England	12260	160	13114.75 <sup>c</sup>
Marzo, 2009 <sup>84</sup>	2003-2006	France	Imprisoned individuals dependent on opioid and were recruited within first week of imprisonment	507	10	1250

Study (Author, ref)	Years of cohort observation	Country	Sample description	N	N deaths	N person-years
Maughan, 2019 <sup>85</sup>	2006-2012	United States	Patients who were admitted and discharged from substance abuse treatment providers for the Texas Department of State Health Services substance between 2006-2012	NR	629	50254
Merrall, 2012 <sup>86</sup>	1996-2006	Scotland	Individuals in contact with drug-treatment services across Scotland between 1996-2006 as identified by Scottish Drug Misuse Database (SDMD)	45377	1772	239771
Moskalewicz, 1996 <sup>88</sup>	1983-1992	Poland	People who inject drugs and were attending treatment in the detoxification unit of the Institute of Psychiatry and Neurology, Warsaw between 1983-1992	656	82	3594
Nambiar, 2015 <sup>93</sup>	2008-2012	Australia	People who inject opioids in Melbourne as identified using MIX cohort	655	24	2400 <sup>c</sup>
Orti, 1996 <sup>96</sup>	1985-1991	Spain	People dependent on opiates identified via emergency rooms and treatment centres	15711	1315	43718.1
Parmar, 2017 <sup>98</sup>	2014-2016	England	Prisoners in 16 England prisons with history of heroin use by injection randomised to receive either naloxone or control upon release (N-ALIVE study)	1557	13	774.43
Pavarin, 2017 <sup>99</sup>	1975-2013	Italy	Subjects attending 12 public centers for addiction treatment (SERT) for dependence on heroin in Bologna, northern Italy between 1975-2013	5899	1069	74467
Peles, 2018 <sup>101</sup>	1993-2017	Israel	Patients admitted to Adelson Clinic for Drug Abuse, Treatment and Research for MMT between 1993 and 2016	868	237	10146.9
Pierce, 2015 <sup>102</sup>	2005-2009	England	People who use opioids in England identified from drug treatment and criminal justice sources	198247	3974	541891
Quan, 2011 <sup>105</sup>	2005-2007	Vietnam	Males who inject drugs in Thai Nguyen province, Vietnam recruited through networks	894	45	710.1
Risser, 2001 <sup>107</sup>	1995-1997	Austria	Individuals involved in opiate-related emergencies from ambulance run sheets, currently or formerly enrolled in maintenance treatment	1720	95	4222.69 <sup>c</sup>
Russolillo, 2018 <sup>109</sup>	1998-2015	Canada	Individuals with a conviction history and filled a methadone prescription between 1998-2015 as identified through the Ministry of Health's PharmaNet and Ministry of Justice's registry of convictions	14530	1275	114243.7
Sanvisens, 2014 <sup>111</sup>	1985-2006	Spain	Patients admitted for hospital detoxification at three tertiary care facilities in Barcelona, Spain between 1985-2006	3388	1178	38577
Soyka, 2006 <sup>114</sup>	1993-1994	Germany	Patients who are opioid dependent as identified through a nationwide survey of substitution physicians in Germany via COBRA cohort	2694	28	1875.7
Soyka, 2011 <sup>115</sup>	2004-2010	Germany	Patients who are opioid dependent as identified through a nationwide survey of substitution physicians in Germany via COBRA cohort	2284	131	10916.67 <sup>c</sup>
Stoove, 2009 <sup>117</sup>	2000-2005	Australia	Individuals recorded with a non-fatal heroin overdose attended by ambulance between 2000-2005	4884	164 <sup>a</sup>	13630
Uosukainen, 2013 <sup>118</sup>	1998-2010	Finland	Clients seeking treatment at Helsinki Deaconess Institute in Finland during 1998- 2008	780	61	5371.8
Veldhuizen, 2014 <sup>119</sup>	1990-2005	United States	Patients discharged from California hospitals with diagnoses of opioid dependence, abuse, poisoning, or withdrawal from Office of State-wide Health Planning and Development	68066	13107	390438
Vlahov, 2008 <sup>120</sup>	1997-2002	United States	People who inject drugs and enrolled in CIDUS-II who self-reported using opioids	1986	68	8629.3